



# **WP3 – Information Platform Progress Report**

## **3<sup>rd</sup> Epiwork Meeting**

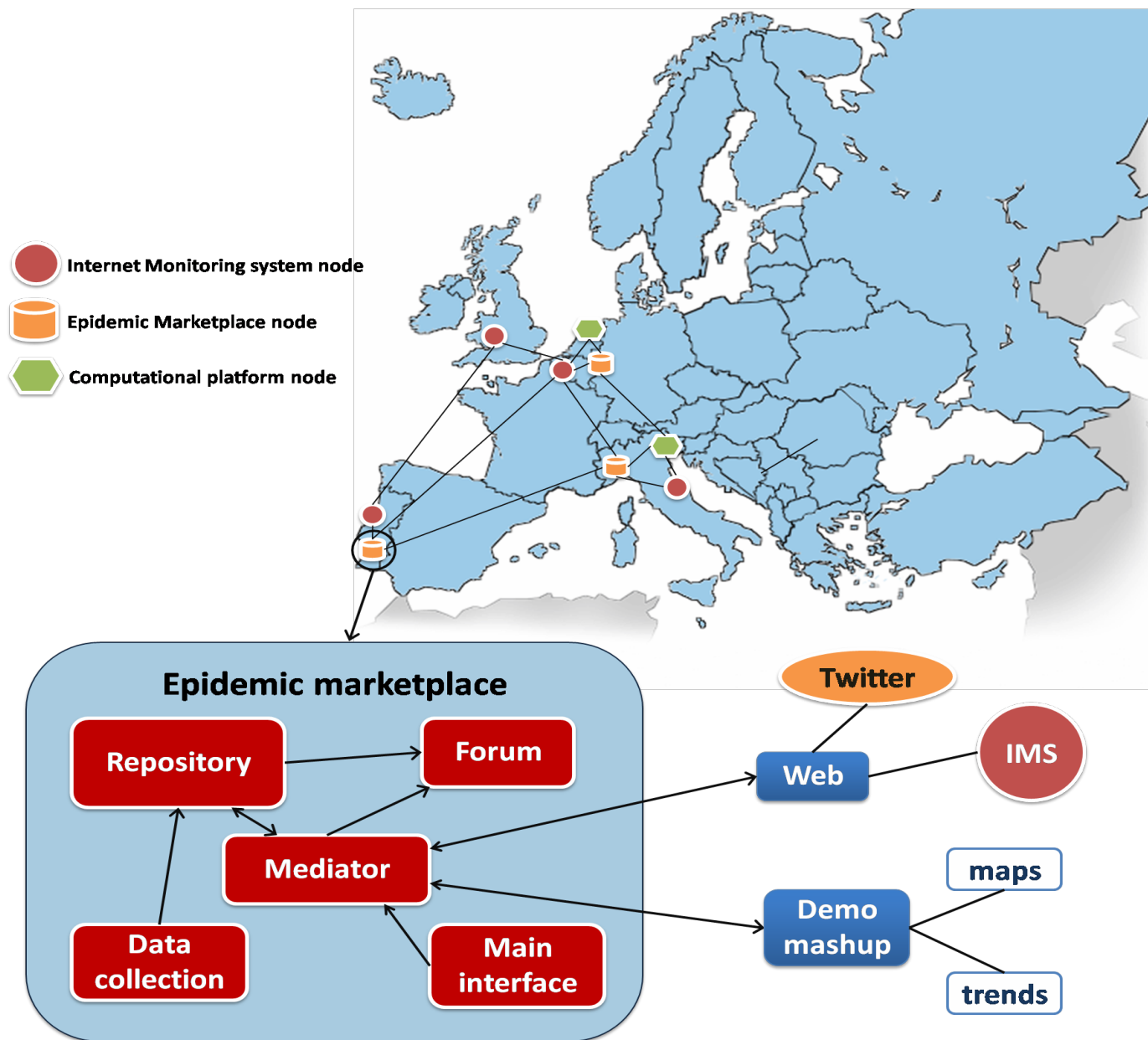
Prè Saint Didier 16<sup>th</sup> & 17<sup>th</sup> Jan, 2011

Mário J. Silva

FFCUL

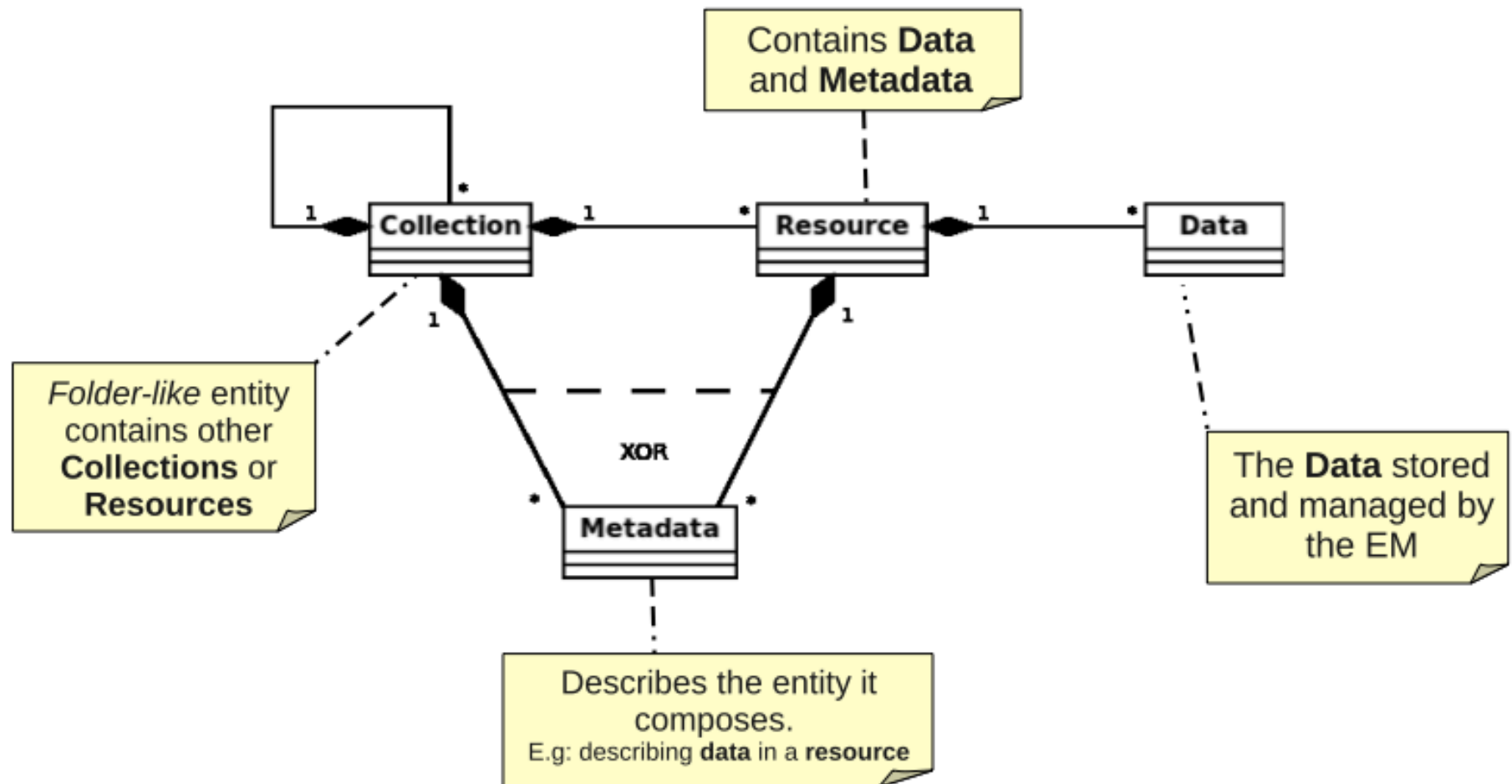
[mjs@inesc-id.pt](mailto:mjs@inesc-id.pt)



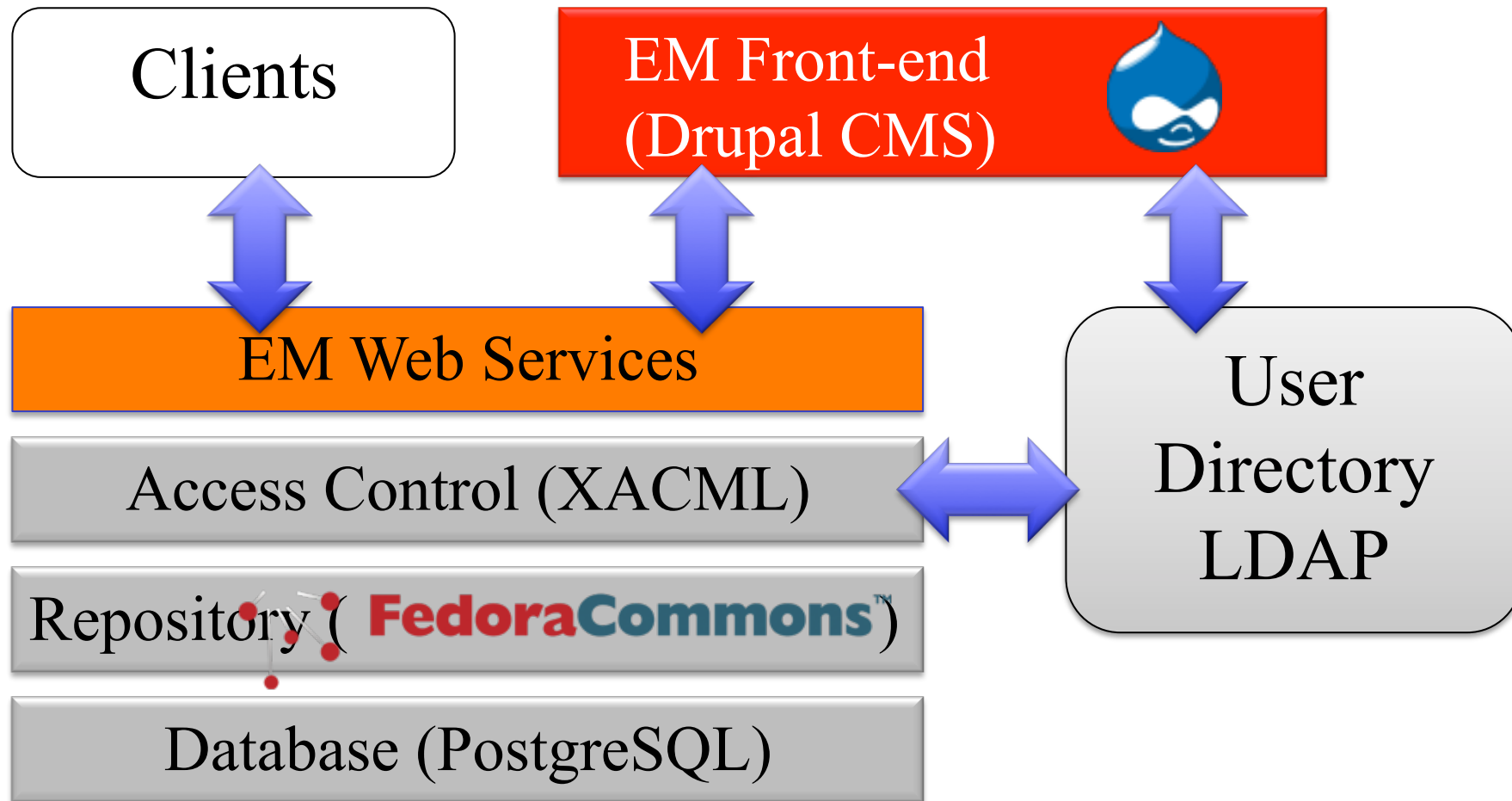


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# Conceptual Model of the EM Repository



# EM 2.0 Software Components



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## Resource Metadata

Meta-data	
<b>Title</b>	Twitter dataset H1N1 + Portugal 4-6-2009
<b>Creator</b>	<a href="#">LASIGE node of the Epidemic Marketplace</a>
<b>Subject</b>	twitter message dataset
<b>Description</b>	<p>This dataset contains Twitter messages containing the words H1N1 and Portugal collected between 16-5-2009 and 3-6-2009, Information is a 7 columns relation, containing the following data:</p> <p>Column 1- keyword 1 (disease)- H1N1            Column 2- Keyword 2 (location)- Portugal            Column 3- Source (Twitter)            Column 4- Author of the message (user id)            Column 5- The message body (evidence)            Column 6- score            Column 7- date (day and hour)</p>
<b>Publisher</b>	Epiwork – <a href="http://www.epiwork.eu">http://www.epiwork.eu</a>
<b>Format</b>	text/tab-separated-values
<b>Language</b>	English, Portuguese
<b>Contributor</b>	Luis F Lopes, Joao M Zamite, Bruno C Tavares, Francisco M Couto, Fabricio Silva, Mario J Silva
<b>Relation</b>	Luis F. Lopes, João M. Zamite, Bruno C. Tavares, Francisco M. Couto, Fabrício Silva and Mário J. Silva. (2009). Automated Social Network Epidemic Data Collector. INForum informatics symposium.
<b>Source</b>	<a href="http://epiwork.di.fc.ul.pt/collector/">http://epiwork.di.fc.ul.pt/collector/</a>
<b>Coverage</b>	Spatial: Portugal, Temporal: 2009-5-16 to 2009-6-3
<b>Rights</b>	Creative Commons Attribution-ShareAlike (CC BY-SA), <a href="http://creativecommons.org/licenses/by-sa/3.0/">http://creativecommons.org/licenses/by-sa/3.0/</a>

**Initial Graphic Style  
Consortium use only**

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## Advanced Search

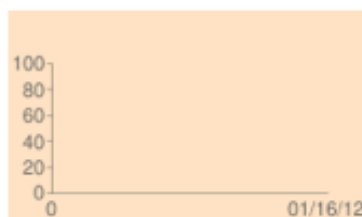
### [Become a Curator](#)

A curator is a user that has some administrative permissions over the Epidemic Marketplace website. [See more](#)

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## Website Tour

Announced at 3<sup>rd</sup> meeting  
Try it at:  
[Epimarketplace.net](http://Epimarketplace.net)

## Most visited documents of the week

### [Epi Info](#)

Luis Filipe Lopes

2010-09-17

Epi Info™ and a personal computer, epid ...

Subject: epidemic  
Type: Software

[See more](#)

### [cumEl Salvador](#)

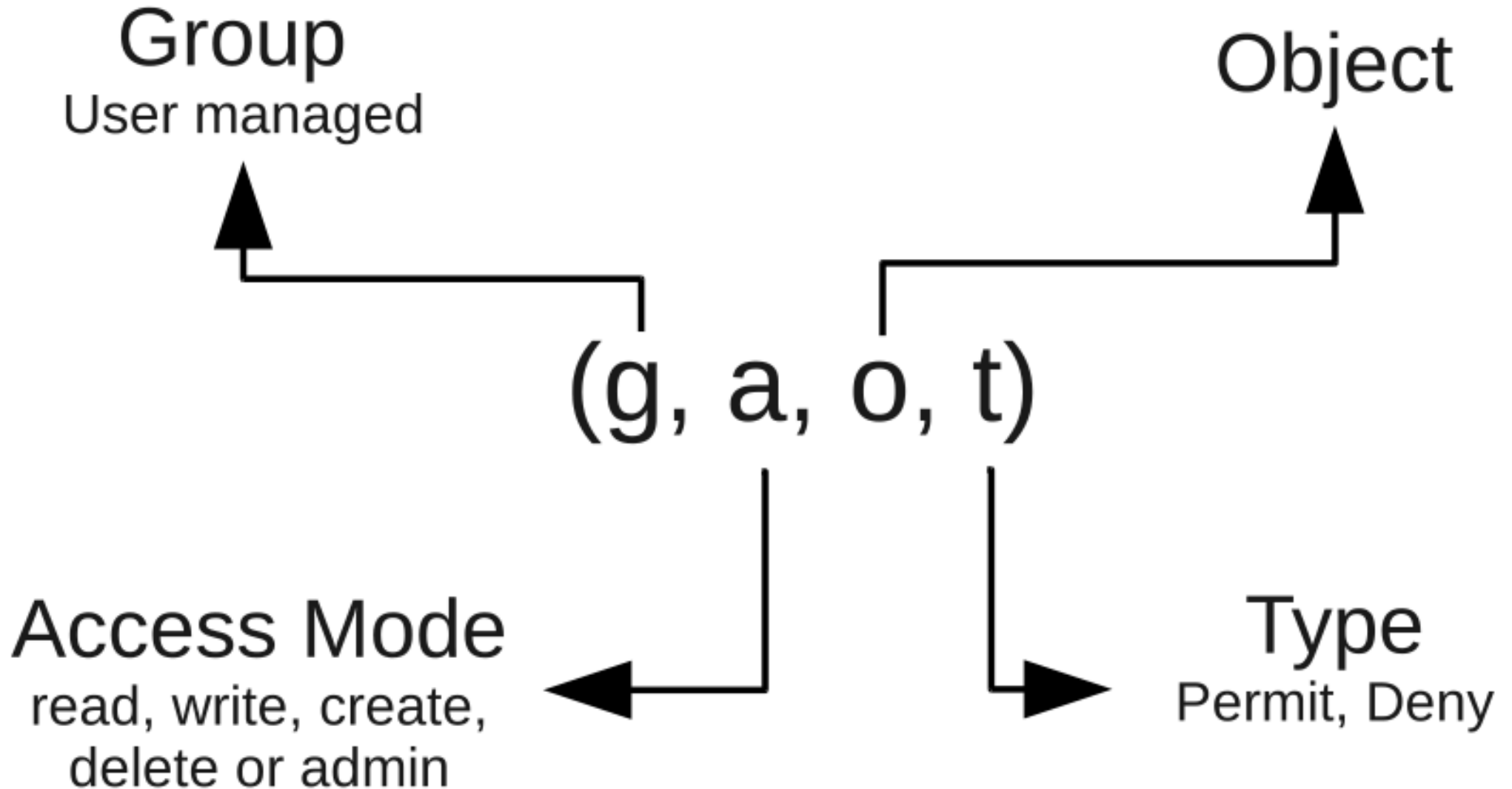
Daniela Paolotti

2010-06-10

Subject: epidemic  
Type: Dataset

[See more](#)

# Access Control Model





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# Epiwork Deliverable 3.5: Epidemic data ontology

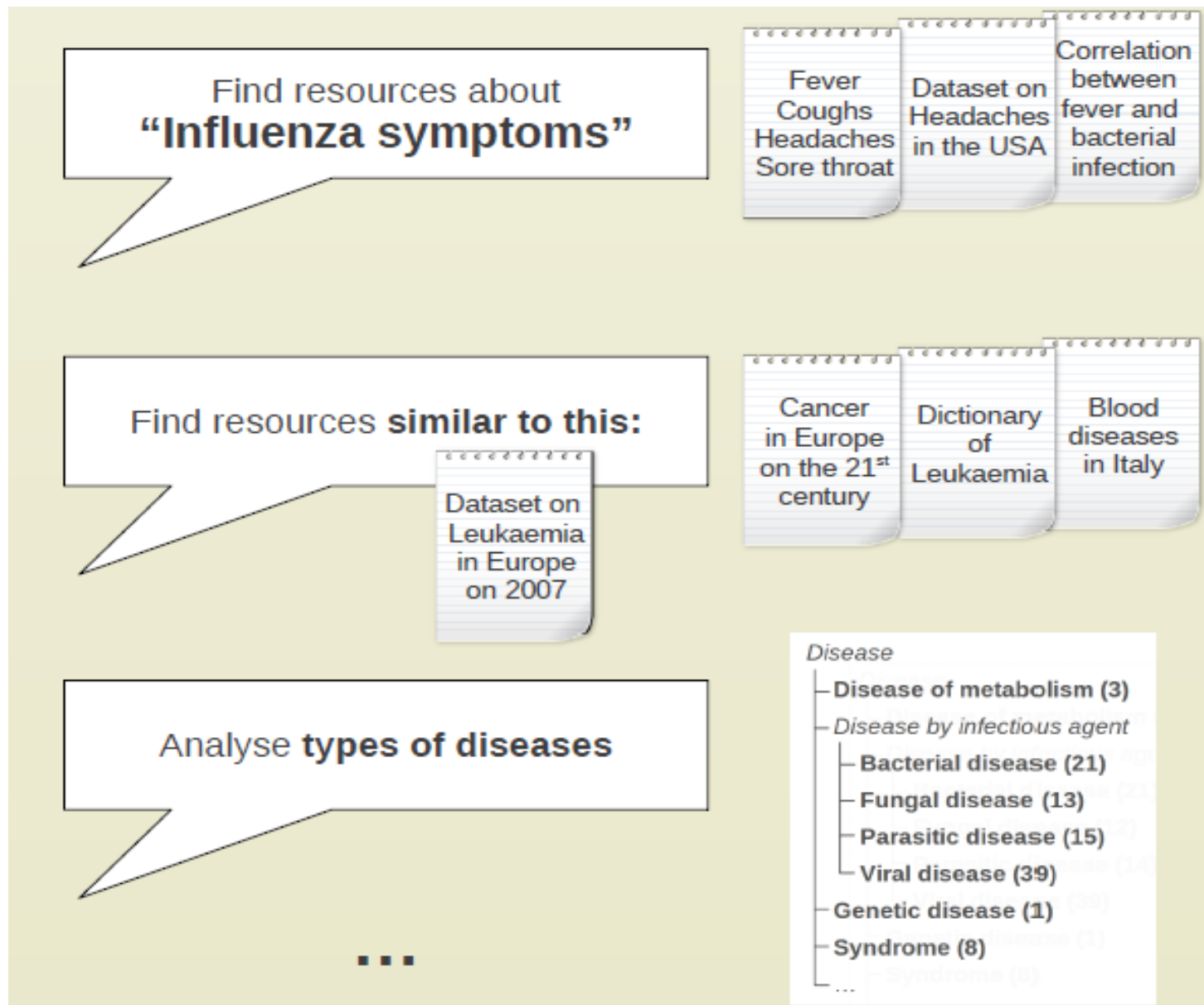
João D. Ferreira<sup>1</sup>, Catia Pesquita<sup>1</sup>, Francisco Couto<sup>1</sup>, Mário Silva<sup>1</sup>

<sup>1</sup>University of Lisbon, Faculty of Sciences, LASIGE, Portugal

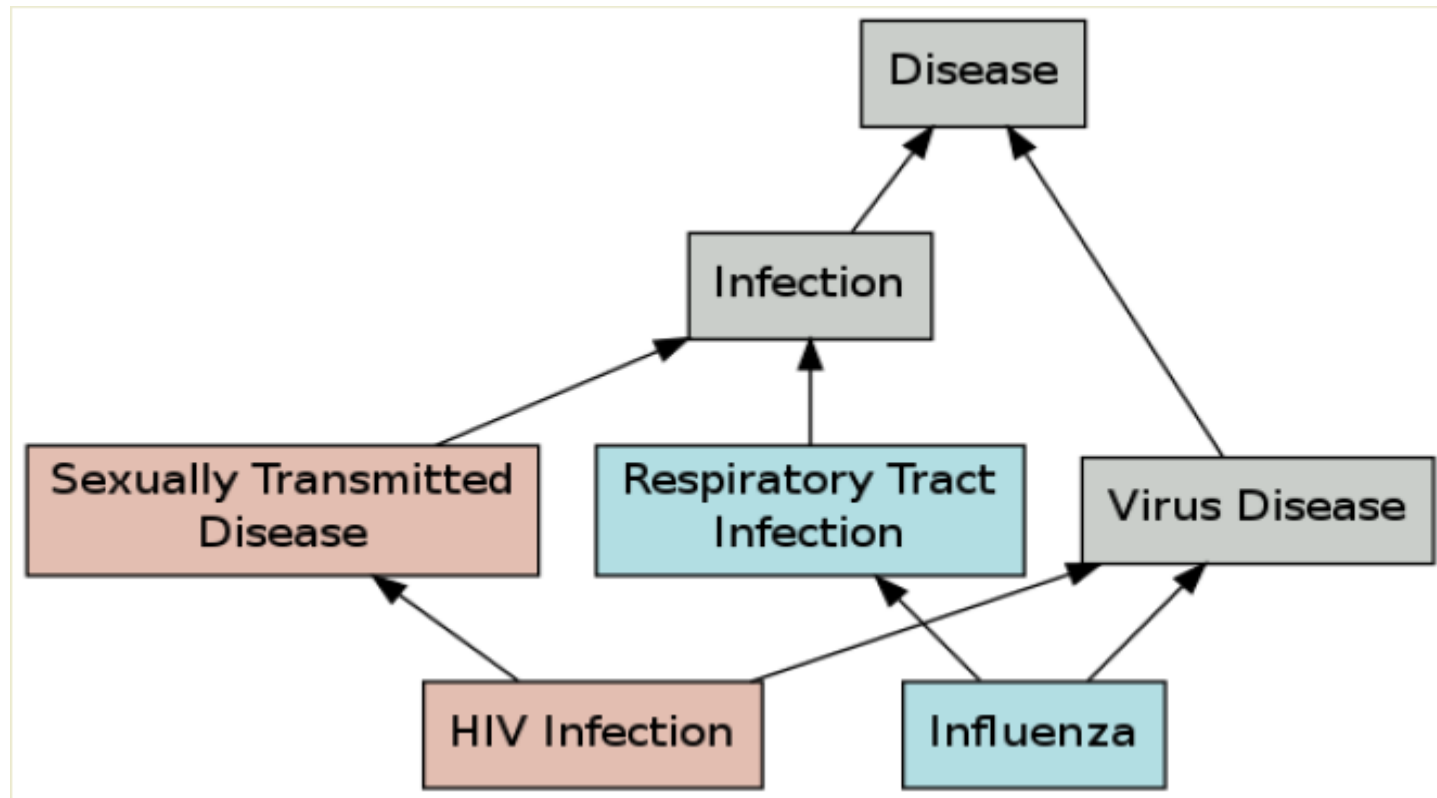
31 January 2012

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# NERO (see upcoming D3.5)



Epidemiology-  
related ontologies

“Foreign” epidemic  
resources

*feedback*

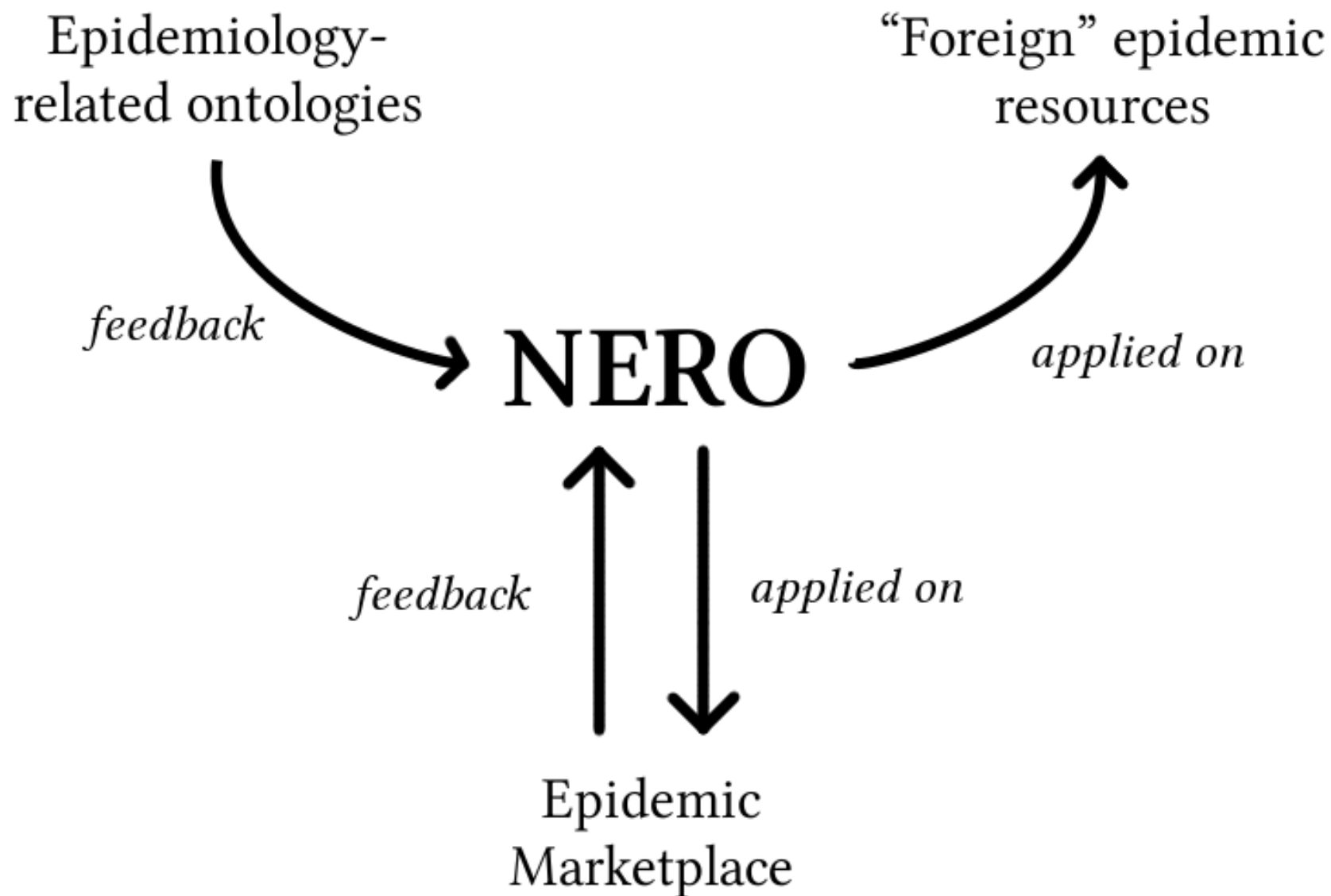
**NERO**

*applied on*

*feedback*

*applied on*

Epidemic  
Marketplace



# Ontologies selected for NERO

- MeSH
- GeoPlanet
- ENVO
- TRANS
- CheBI

**MeSH** used to index articles in biomedical sciences (**general domain**)

**GeoPlanet™** representation of the world **geography**

**ENVO** ontology for the **environment** domain

**TRANS** describes **transmission** of a pathogen from one host to another host

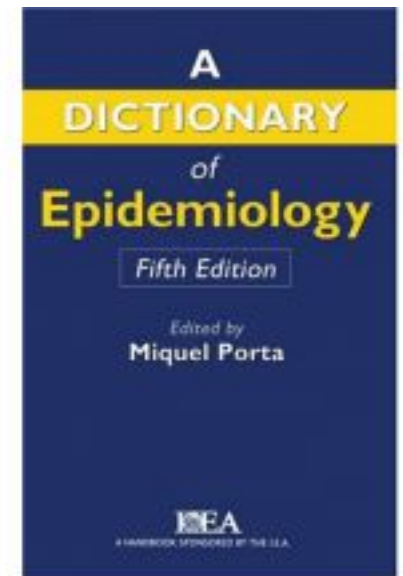
**ChEBI** ontology of **chemical compounds** focussed on biologically relevant entities



Upload resource	
Title:	Influenza in France
Description:	Contains data collected by an organisation
Disease:	Influenza
Host:	Human
Transmission:	Airborne
Environment:	Temperature, Humidity
Location:	France
Demography:	School years
...	

# Dictionary of Epidemiology

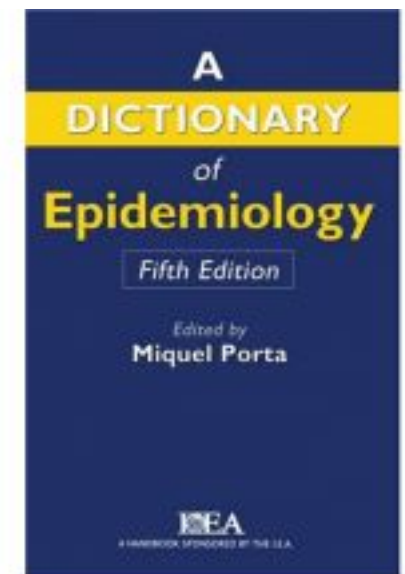
- Contacts with Miquel Porta (editor of the *Dictionary of Epidemiology*, 5<sup>th</sup> edition)
- Discussing the upgrade of the Dictionary of Epidemiology to an Epidemic Ontology
  - Will add semantic relationships among dictionary terms



# Idea: Semantification of the Dictionary of Epidemiology

DISEASE MODEL - Quantitative simulation of the natural history of a disease (incidence, progression, prognosis, etc.) based on epidemiological data. A public health model is population-based and is used in planning and evaluating health services, whereas a clinical model is used in individual patient care.

- DISEASE MODEL **is a** Quantitative simulation  
DISEASE MODEL **is based on** epidemiological data
- public health model **is a** DISEASE MODEL  
public health model **is a** population-based model  
public health model **is used** in planning and evaluating health services
- clinical model **is a** DISEASE MODEL
- clinical model **is used** in individual patient care

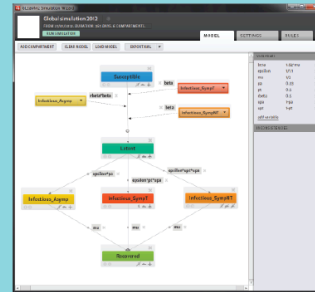




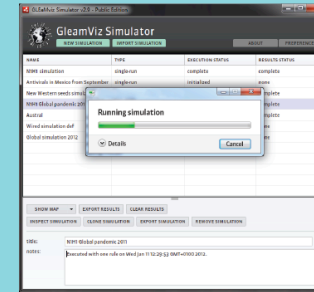
Visiting User



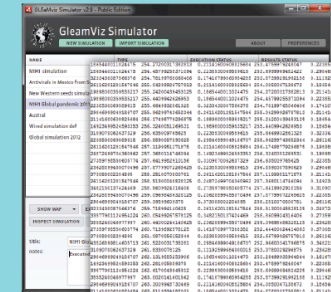
Epidemiologist



1. Design a new simulation



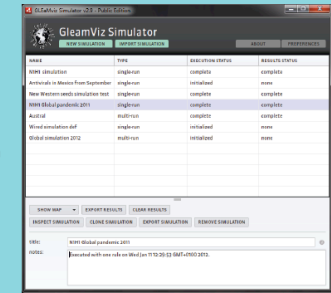
2. Run the simulation



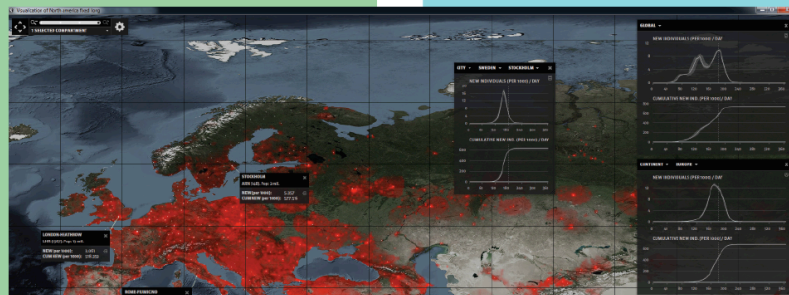
3. Get the output



1. Browse the epidemic marketplace



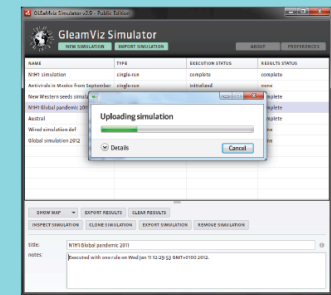
4. Browse the epidemic marketplace



2. Explore the results



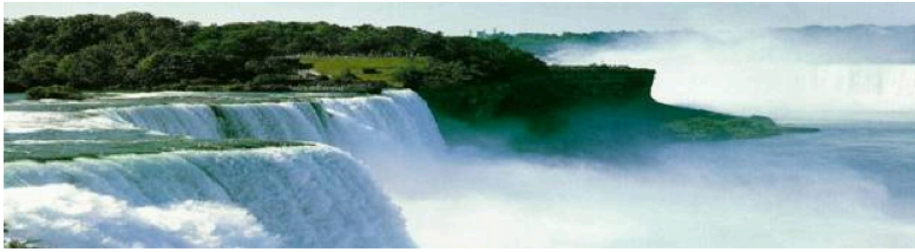
6. Share the simulation



5. Upload the simulation

7. Explore the results

# Events 3rd year



## International Conference on Biomedical Ontology

University at Buffalo, NY • July 26-30, 2011

**NOTE: We have reached sell-out capacity for ICBO events.  
REGISTRATION IS NOW CLOSED.**

Ontologies are being used in a variety of their use in annotation of both clinical and translational research. Principles of biomedical phenomena of almost all work well together. But as ontology development and coordination in ontology development need for an overarching conference involved in the development and designed to meet this need.



## Privacy and Crowdsensing: Can't we just be friends?

Mário J. Silva

Universidade de Lisboa, Faculdade de Ciências,  
Departamento de Informática

[mjs@di.fc.ul.pt](mailto:mjs@di.fc.ul.pt)

## Exploring the Semantics of Biomedical Ontologies



Francisco M Couto  
12 April 2011  
EBI External Seminar

**FuturICT's Ethics Meeting (Zurich, June 17 2011)**



# EM-related Publications (3rd year)

- Zamite, J., Silva, F., Couto, F., Silva, M. 2011: MEDCollector: Multisource epidemic data collector. Transactions on Large-scale Data-and Knowledge-centered Systems IV: Special Issue on Database Systems for Biomedical Applications (6990), 40-72.
- Francisco Couto, Mário J. Silva 2011: Disjunctive Shared Information between Ontology Concepts: application to Gene Ontology. Journal of Biomedical Semantics.
- Catia Pesquita, Francisco Couto. Where GO is going and what it means for ontology extension. International Conference on Biomedical Ontologies 2011.
- Bruno Tavares, Hugo Bastos, Daniel Faria, Joao D. Ferreira, Tiago Grego, Catia Pesquita, Francisco Couto, The Biomedical Ontology Applications (BOA) framework.Proceedings of ICBO 2011.
- João D. Ferreira, Francisco Couto, Generic semantic relatedness measure for biomedical ontologies.Proceedings of ICBO 2011.
- Juliana Duque, Mediação Dados-Informação: Design de Informação para a Epidemic Marketplace. Master Thesis, University of Lisbon, School of Fine Arts, November 2011.

# Changes in UL WP3 Team

## Out

- Juliana Duque (front-end)
- Patrícia Sousa  
(front-end+systems)

## In

- João Ferreira (ontologies)
  - Paulo Graça (front-end)
  - Carlos Sousa (front-end)
  - Tiago Posse (systems)
- and
- Cátia Pesquita (ontologies)

# **FFCUL Team on WP3**

- **Mário J. Silva, Dulce Domingos, Francisco Couto, Cátia Pesquita**
- **João Zamite, João Ferreira, Paulo Graça.**
- **Tiago Posse, Carlos Sousa**

# WP3: status

- D3.4 and D3.5 due Feb 2012
  - D3.5 is ready for internal circulation.
  - D3.4 is progress report on the EM deployment
- Overcoming the initial difficulties in hiring the planned resources.
  - Refreshing team with competencies required for the 4<sup>th</sup> year.

# Current Challenges

- Motivate the community to populate the Epidemic Marketplace.
  - Chicken and egg situation.
- **Data anonymization** is a major concern
  - Rights management to the sentence level!
  - Anyone giving away curated UGC?
- Dataset selection and generation policies
- Semantification of epidemic data

**Unchanged !**

# Focus 4th Year

- *Enrichment of the catalogue* of epidemic resources.
  - Rich annotations
  - More resources
- Debug + implement (lots)
- Demonstrate integration with Computational Platform - **GLEaMviz**
- New functionalities:
  - Implementing new **social network access control** in EM 2.0
  - Negotiation of access to resources.
- *Dissemination*

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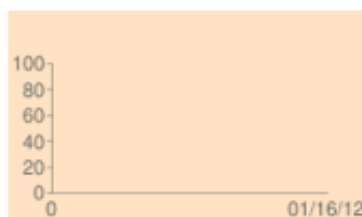
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### [cumEl Salvador](#)

Daniela Paolotti

2010-06-10

Subject: epidemic  
Type: Dataset

[See more](#)

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# **WP3 - Wrap up discussion and timelines before the project review meeting**

3rdEpiwork Meeting

Pre Saint Didier Jan 17th 2012

# WP3 SWOT Analysis

## Strengths

- Epiwork-driven EM
- Standards-based
- Open Source modules
- Supported (until 2013?)

## Weaknesses

- **Unpopulated EM**
- Looking for the right policies
- What are the incentives?
- ~~Interfaces to WP4 and WP5?~~

# WP3 SWOT Analysis

## Opportunities

- Epiwork testbed
- Creation of a baseline for epidemic modeling
- Showcase for partners' outputs

## Threats

- ~~Consortium enters “everyone for himself” mode.~~
- ~~“Somebody will take care of that” attitude~~
- EM perceived as a very expensive, complex and useless cache

# ToDo until Mar 2012

- Demo integration with GleanViz
- Expose more EM functions in the front-end

# **Todo list and planning (Pré Saint Didier, Jan 2012)**

1. Populate Repository
2. New Front-end and updated components  
(prepare market)
3. Access control policies & distributed authentication
4. Linked Epidemic Data
5. Ethics, Privacy and Anonimization
6. Replicate EM node

# Scheduled Deliverables

		Year 1			Year 2			Year 3			Year 4		
		M4	M8	M12	M16	M20	M24	M28	M32	M36	M40	M44	M48
<b>WP3</b>	<b>Information platform</b>												
Task 1			<b>D3.1</b>										
Task 2			<b>D3.1</b>										
Task 3				<b>D3.2</b>		<b>D3.3</b>				<b>D3.4</b>			<b>D3.6</b>
Task 4										<b>D3.4</b> <b>D3.5</b>			<b>D3.6</b>

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